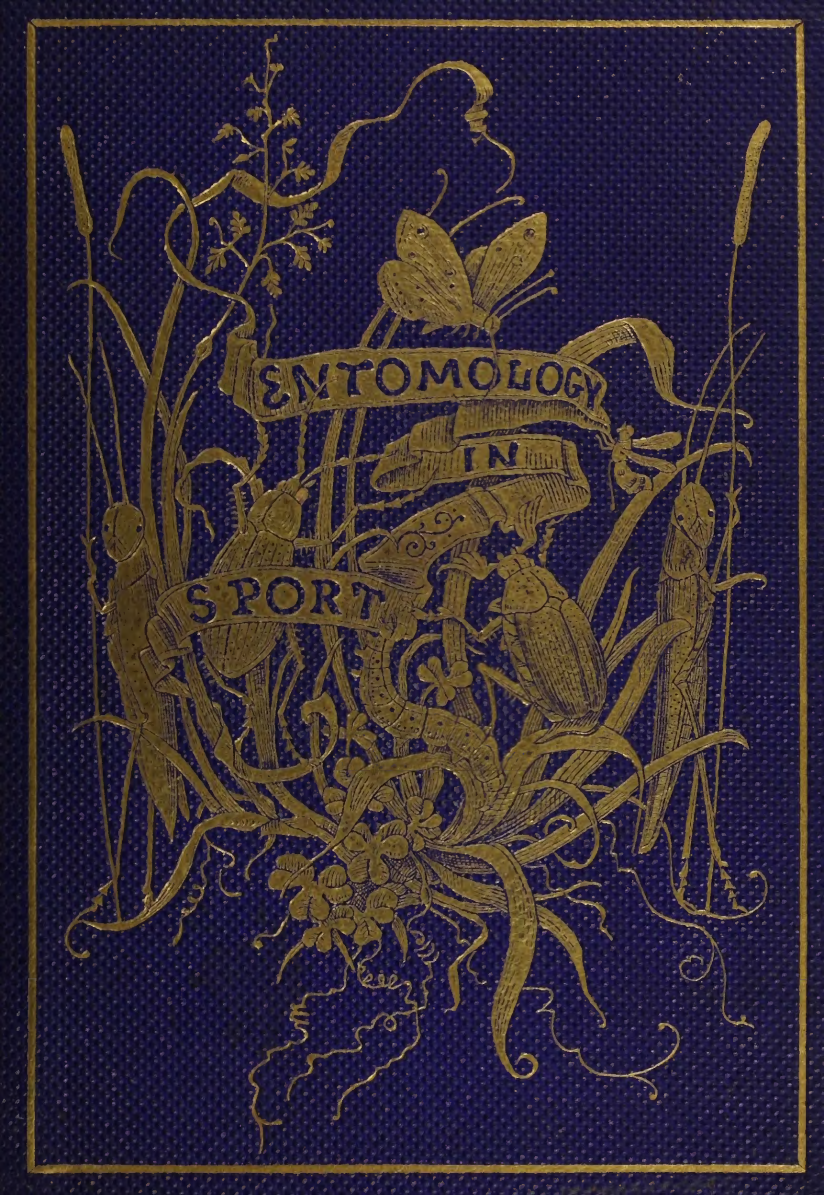

ENTOMOLOGY
IN
SPORT

ENTOMOLOGY IN SPORT,

AND

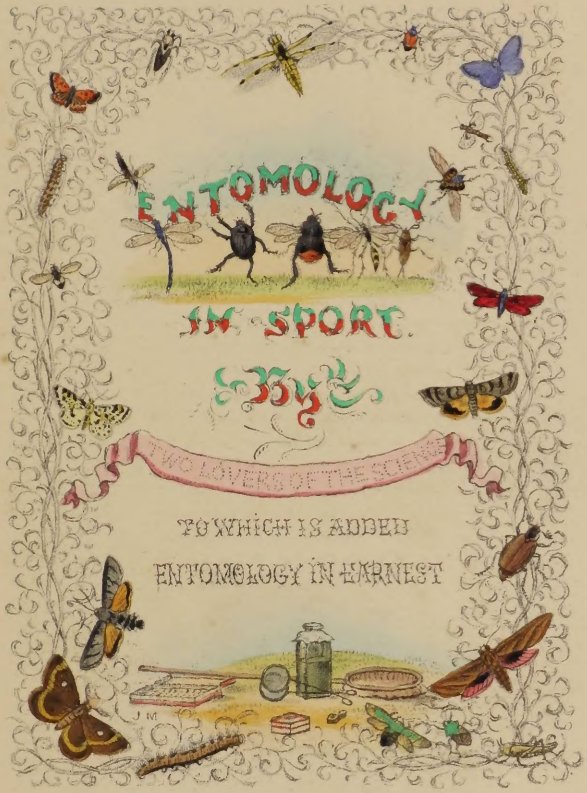
ENTOMOLOGY IN EARNEST;

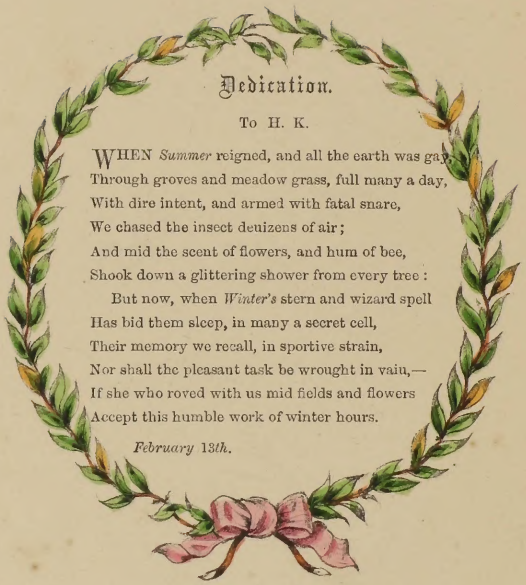
BY

THE HONORABLE Mrs. W. & LADY M.

LONDON: PAUL JERRARD & SON, 170, FLEET ST.




ENTOMOLOGY
IN SPORT.
By
TWO LOVERS OF THE SCIENCE
TO WHICH IS ADDED
ENTOMOLOGY IN EARNEST



Dedication.

To H. K.

WHEN *Summer* reigned, and all the earth was gay,
Through groves and meadow grass, full many a day,
With dire intent, and armed with fatal snare,
We chased the insect denizens of air;
And mid the scent of flowers, and hum of bee,
Shook down a glittering shower from every tree:
But now, when *Winter's* stern and wizard spell
Has bid them sleep, in many a secret cell,
Their memory we recall, in sportive strain,
Nor shall the pleasant task be wrought in vain,—
If she who roved with us mid fields and flowers
Accept this humble work of winter hours.

February 13th.

PREFACE.

The following pages are intended, not so much for the scientific, as for the young or the comparatively uninstructed reader. The Authors have therefore aimed at making them entertaining, rather than complete or systematic; an agreeable bait, in short, by means of which unwary youth may find themselves caught in the meshes of science, while seeking only for amusement.

They trust, however, that the accounts which the insects are supposed to give of themselves, as well as the facts related in the second part of this little work,—marvellous as many of those facts appear,—will be found to be accurate, and confirmed by good authorities.

"Entomology in Sport" was composed many years since as a present to a mother who ever felt the warmest interest

in the pursuits and enjoyments of her children. She has long, alas! been taken from them; but none would have hailed with greater pleasure the publication of this little book, which they jointly wrote and illustrated for her amusement, and which they now desire to dedicate to her memory. The Authors venture to publish it by the advice of several friends, who think that it may prove acceptable to others as well as to themselves; the second part, "Entomology in Earnest," has been added with the view of rendering the work more instructive, and better adapted for publication.

It now, after the manner of the emerging Gnat, rises tremblingly on the troubled waters—of Type; and awaits the sentence of—it is to be hoped—an indulgent Public, either to sink and be drowned in Oblivion, or to "come out" successfully, flutter awhile in the sunshine, and enjoy its "little day."

List of Illustrations.

FRONTISPIECE.

TITLE-PIECE.

DEDICATION.

MINOR ILLUSTRATIONS.

INITIAL: THE INVITATION.

MR. SAW-FLY.

INITIAL: ROVE-BEETLE.

NOT "OUT" YET.

INITIAL: CHOICE OF THE QUEEN.

INITIAL: CRICKET'S LEG.

LETTER V: WEEVIL.

INITIAL: THE PARTNERS.

INITIAL.

INSECT DANCERS.

INITIAL: MAY-FLY.

THE BUTTERFLY-NET.

INITIAL: MR. SYRPHUS'S SPEECH.

LARVA OF THE SYRPHUS.

INITIAL.

SYRPHUS AND WASP.

INITIAL.

LARVA AND IMAGO OF DRAGON-FLY.

INITIAL: CADDIS-WORMS AND WALL-FLIES.

INITIAL: THE ENTOMOLOGISTS.

THE CICADA.

INITIAL.

THE BRAVE LITTLE BEE.

A SUDDEN INTRUDER.

INITIAL: REAPPEARANCE OF THE INSECTS.

INITIAL: LADY-BIRDS.

LARVÆ OF LADY-BIRD.

PUPA OF LADY-BIRD.

INITIAL.

THE ENTOMOLOGIST'S TABLE.

INITIAL.

INITIAL: GHOST-MOTH.

CONCLUDING VIGNETTE.

ENTOMOLOGY IN SPORT.



et us dance round a May-pole this beautiful day!"
HARRY-LONG-LEGS exclaimed, the first morning of May,
As he met with a party of neighbours;
(There were SYRPHUS, and WEEVIL, a BEETLE and BEE,
And good Mr. SAW-FLY, most frightful to see,



With jaws like a couple of sabres.)
"Well said! 'tis a capital thought," cried the WEEVIL,
"We're growing so dull—'tis a positive evil;
Dear HARRY, I second the motion."
"And I," said the SAW-FLY, "will cut down a pole!"
And the BEE buzzed applause, like a pleasant old soul,
And said 'twas an excellent notion.
Away flew the Insects, their friends to invite,
And long before noon, they had settled it quite.

II.



n a green mossy meadow that lay by the side
Of a murmuring brook, and was half a yard wide,

Our numerous party assembled;
The grass on each side formed a towering shade,
And the pole in the centre, of fairy-flax made,
Like the aspen-tree gracefully trembled.
A numerous party! the dark and the fair,
The long and the short, and the broad and the spare,
All joined in the *mêlée* of dancers;
The Syrphus and Bee brought their friends, to a man,
And the Beetle his cousins, a numerous clan,
And Long-legs young Gnat,—*of the Lancers.*
The Grasshopper came with a hop and a bound,
And pretty Miss Dragon-fly hovered around.
Meanwhile, from the stream that ran murmuring by,
The sad Water Larvæ looked up with a sigh;



Like schoolgirls that pine for a ball or a rout,
To throw up their books, dress in silk,—and *come out!*

III.



But who'll be so rash as to fix on a Queen?
"Let me!" cries a BEETLE; and quickly 'tis seen
He's rather a judge, on the whole;
Though doubtless his choice all the ladies surprises,
As the bright AZURE-BUTTERFLY gracefully rises
To perch on the top of the pole.
But the gentlemen whisper,—(and really, 'tis true)
"She's lovely,—enchanting!—but rather a *blue*."

IV.

Now the crowd gather round, the diversion to see,
And all for the revels prepare;
The music began—'twas the SYRPHUS and BEE,
Both humming away in the air;
But that famous performer, the GRASSHOPPER, cried,
"To sing at a party he ne'er could abide!"
Though everyone pressed him to chirp, he averred
That hopping and dancing he greatly preferred.
For his musical talents he never could show
In public,—as all Entomologists know.



his settled, the Insects of fashion advance,
And each one his partner selects for the dance.
The Beetle went forth with an Ichneumon-fly,
Whose waist was next door to invisible;
The Syrphus so short, and the Long-legs so high
Were a contrast remarkably risible;
The great Water-beetle arose from the brook,
With a rifle-green coat, and a dandified look,
Then flew to a cousin who lived upon land,
And begged she'd consent as his partner to stand.
Thus all took their places the May-pole around,
And the music struck up with a merrier sound.

VI.

"Now join in the dance!" said the Butterfly Queen,—
Her subjects obey'd: and a livelier scene
Good reader, I think you ne'er saw—
Waltz, polka, or jig, at ball, party, or play,—



Than these blithe little insects all tripping away
On the light and fantastical claw.

I'm sure you ne'er witnessed such feats of activity
As then were performed at the scene of festivity;
The Dragon-fly's movements were graceful and airy,
And even the Saw-fly seemed light as a fairy;
The Grasshopper jumped ten times his own height,
And could have done more, had he thought it polite—
Such rivals as these, Taglioni might dread,
And so might the youth who can stand on his head:
In short, 'twas as merry a scene, and as gay
As you'd wish to behold on a bright summer's day.

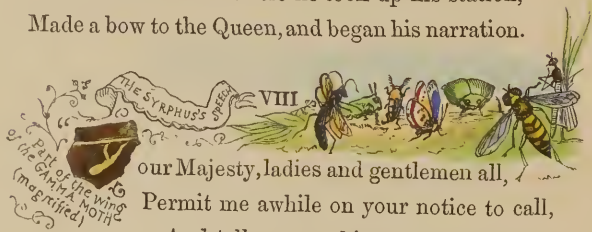
VII.

An hour passed away—and it must be confessed
That, fleet as they are, even Insects must rest;
'Tis thus we have seen in a sunshiny hour
A Butterfly pause on a leaf or a flower—
(To its cost, as it presently found,



If we thought it was rare, or its beauty admired).
And thus did our Insects at length become tired,
And sat down to rest on the ground;

Then out spoke the Queen, "Mr. SYRPHUS, arise!
Your history, I know, will my subjects surprise."
So SYRPHUS got up—and a neat little fellow
Was he, in his jerkin of striped black and yellow.
In the midst of the circle he took up his station,
Made a bow to the Queen, and began his narration.



our Majesty, ladies and gentlemen all,
Permit me awhile on your notice to call,
And tell you my history, (hear, hear.)
The earliest thing I can call to my mind
Was myself on the stalk of a '*black-cap*' to find,—



A Larva remarkably queer:
My shape, to the form that at present you see
Was just as unlike as can possibly be;
I rather resembled a *slug*" (cries of "Oh!")
"It may appear strange, but the fact is just so.

I had not a leg in the world, nor a head,
But a sharp kind of tooth, which I'm sure was the dread
Of the Aphides clustering round:
For I always considered them made for my prey,
And their numbers I wondrously lessened each day,
(Though ruthless I'm sure it must sound.)

IX.

At length, when I'd grown to a pretty good size,
One day I perceived with a sudden surprise,
Both broader and shorter I'd grown.



I soon was encased in a hard sort of shell,
And then into slumber so deeply I fell,
What happened me next is unknown.
This I'm sure of—in nine or ten days I awoke;
And fancy my joy when my prison I broke! . . .
The morning was lovely and fair;
I flew towards the sky with a hum of delight,
Then roved in the garden from morning till night,
And felt myself free as the air!

X.

One word I would add, ere I close my narration;—
Of the WASP I have often been thought a relation;
This is quite a mistake, as 'tis well known to you
That he has *four* wings, and that I have but *two*;

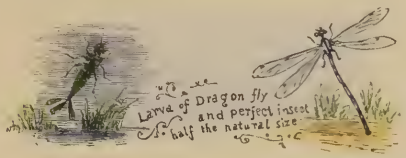


Besides which, I never could sting: I confess
We are rather alike in the matter of dress,
But in no other point, be it known!
And now, my dear friends, I shall finish, because
I have no more to say." . . . Amid *hums* of applause
The hon'rable insect sat down.

XI.

Here some of the party their wonder expressed;
'Twas strange, 'twas amazing! whoe'er could have guessed
That the SYRPHUS such changes had seen?
That so sprightly a youth e'er looked stupid and dead,
Resembled a slug, or on *Aphides* fed,
Or other than charming had been.

But the DRAGON-FLY said, that "to her it would seem
By no means so wondrous a thing;



For that she had (till yesterday) lived in a stream,
With three tails, and without any wing."

XII.



hen the WALL-FLY declared he had something to tell,
Which he humbly imagined would please them as well;
Said he "I once lived in the water,
But being too soft unprotected to roam,
I neatly constructed a portable home,
And the softest of silk was my mortar.
'Twas a nice little dwelling—the walls were of sand,
Joined together, methinks, with a masterly hand;
While outside by way of adornment were placed
Small freshwater shells, with a good deal of taste.
But some of my cousins their houses defended
With sticks, leaves, and straws, most ingeniously blended.
I wish I could take you their dwellings to see—
But now I'm so changed, 'twould be fatal to me;

If I dived to the spot where a shelter I found
In the days of my youth, I should surely be drowned!"

XIII.



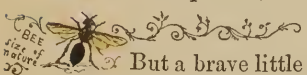
While thus they conversed in a neighbourly way,
Cicada exclaimed "I have something to say;
My friends! we're in imminent danger;
Four terrible Giants I yesterday saw
With feelings of terror, amazement, and awe,
To which I before was a stranger;
They strode o'er the meadows—so frightfully high!
I'm sure many thousand times larger than I;
And horror! they chased our unfortunate race
With a dreadful machine, at a terrible pace!
While I gazed—in a moment—I found myself caught,
And quick to the edge of a prison was brought—
Where, looking below me, I spied
A Meadow-brown-butterfly, Ichneumon-fly,
Moth, Weevil, and Earwig, all helplessly lie,
With other poor prisoners beside.

XIV.



When what do you think was my spirited act?
First freeing my form with a good deal of tact,

I jumped from their clutches—I bounded away—
And lived to partake of the joys of to-day!
But did you e'er hear of so dreadful a thing?"
Said the GNAT, looking sly, "I shall certainly sting
These monsters whenever I meet them!"
"But what can the Giants intend" asked the Queen—
"To do with them?" "Why," said CICADA, "I ween
Their plan is, to kill and to eat them!"



But a brave little BEE said "The Giants can't fly;
I don't the least dread them!" Cried SYRPHUS, "Nor *I*!"

XV.

That moment a cloud seemed to darken the air—



The Insects looked up with a terrified stare—
Oh! horror of horrors! the Net!! and the Giants!!!
Away went the SYRPHUS's looks of defiance...
Not travellers when late for the packet or train,
Not parties pic-nicking when caught in the rain,

Not chess-players conquered by cleverer men
E'er felt such dismay as our Insects did then.
And the BUTTERFLY whispered, in accents of dread,
"They'll grind up our *tarsi* to make them some bread!"
But luckily, just at that height of despair
A brilliant LIBELLULA soared in the air!
'Twas the first they had seen, and, delightful to say,
It tempted the Net and the Giants away.
But to this day, we're sure, th' Entomologists wonder
What caused such loud humming the meadow-grass under.

XVI.



When the foe passed away, all the courage returned
Of the brave little SYRPHUS and BEE;
The idea of *danger* so stoutly they spurned,
'Twas really refreshing to see.
"Let us dance!" said the Insects, "the sun shines so bright;
If the Giants return, we may all take our flight!"
But the Giants far off had good-naturedly gone,
And all unmolested the gambols went on;
'Twere well if mankind could their sorrows repair
As soon as these volatile children of air!
When they rested, a sweet little LADY-BIRD rose,
And said, "Ere our merriment comes to a close,

I'll speak in defence of a race whom I fear
You consider your foes, most unjustly ; " (hear, hear !)



XVII.



My friends, you will laugh when you find that my clients
Are no more nor less than—these terrible Giants !
Not one of you knows, or can know them as well
As I,—which you'll see when my story I tell.
I was born on a leaf of a sycamore tree
Last summer ;—what gay little people were we,
My brothers and sisters and I !



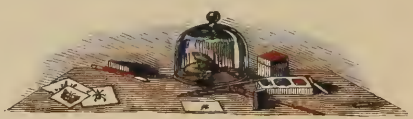
As we roamed on our leaf, and grew active and strong,
And fed on white *Aphides* all the day long,
Still finding a constant supply.
And then 'twas so strange how each one fell asleep



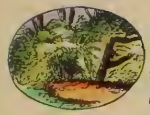
In a blanket of yellow and black,
And woke in ten days from that slumber so deep,
With sixteen white spots on his back,
And a smooth yellow coat, and a long pair of wings,
Altogether the neatest and happiest of things !

XVIII.

e stayed on our tree: I was walking one day
On the well-beloved *leaf* of my youth (so to say)
When a hand shook me down from the branches so pliant,
And I found myself held—in the grasp of a Giant!
You may fancy my fright,—so 'twere needless to tell,
But soon I found out 'twas in vain;
For, my friends, I was treated so wondrously well,
Quite absurd 'twould have been to complain.
I was instantly placed in a snug little shed,



And duly each morn was on *Aphides* fed.
But one day, I saw—what surprised me to view!
Just fancy! the portraits of many of you,
So like!" (universal sensation.)
"Then said I to myself,—(and I'm sure you'll agree)
'The reason the Giants thus catch us, I see
Is not malice,—but pure admiration!'
For *my* little portrait was also begun;
How honoured I felt! and, as soon as 'twas done,
How gently the monster at once set me free!
How gaily I flew to my sycamore tree!



XIX.

ntre nous, I believe that just *one* of each kind
These singular Giants retain;
But an insect immortalised thus, to my mind,
Has the greatest of cause to be vain.
Take courage, CICADA! forget all your fears;
And now I'll continue my hist'ry;" (loud cheers.)
"When Autumn grew chill, and the leaves fell around,
One dark dreary day, I too fell to the ground,
Then crept into shelter, and, folding my wing,
Slept quietly there till the opening of Spring.
When the sunbeams of April shone warm on my head,
I blithely arose from my snug mossy bed;
Then soared in the air, when with pleasure I spied
My old friends, the Giants, yon beech-tree beside!
How gaily and fearlessly round them I rove,
Whene'er I behold them in meadow or grove;
So I trust you'll allow me to call them *our friends*—
With which proposition my history ends."



XX.

The Insects accepted this humble apology
For that pleasant pursuit which we call
Entomology.

And loudly applauding so graceful a science,
Each drank in a dew-drop, "Success to the *Giants!*"

For the dew had now fallen, and night closed around,
All Nature seemed hushed in a slumber profound,
But the Moon o'er the landscape had shed her soft light,
As each little Insect prepared for its flight.
With bows and with curtsies, all hastened away;
And so end the joys of this wonderful day!



ENTOMOLOGY IN EARNEST ;

A Dialogue.

PART I.

SCENE—*A Lawn in Summer.*

SYLVIUS.—EUGENIUS.

E. THAT little book you read to me, Sylvius, about the insects and their May-day gambols, has inspired me with a strong wish to be an Entomologist ; and thus to explore a field of discovery almost as unknown to me as the North Pole itself. Now, as you have some experience in these matters, I shall be much obliged if you will tell me how to begin, and how to go on ; what insects I am to look for, and where I shall find them ; also something about their names and families, manners and customs.

S. A most comprehensive set of questions indeed ! However, I shall have pleasure in telling you all I can on the subject, which will, I hope, encourage you to find out more for yourself. You

will find it a very delightful pursuit; it makes every walk interesting, and opens to us a new world, in which the wisdom of the Almighty, and his care over his smallest creatures are wonderfully displayed. It is good for us to be thus led away from self and vanity, to "search out the works of the Lord," and to "find pleasure therein."

E. I am sure it is so; because the study of these things, while it really makes us wiser, lowers us at the same time in our own estimation, by showing how little, and how ignorant we are. But now pray begin, and tell me what must be my first step as an Entomologist.

S. I would answer, that your first step is already taken, your mind being now awakened to the subject. Hitherto, although you knew that there were beetles and butterflies, wasps and gnats, you looked upon them merely as an uninteresting background, or an annoying foreground. Now, you think differently; and perceive that "the mighty myriads," which fill the earth, the air, and the water all around you, are marvels of beauty, variety, and instinct. Your object as an Entomologist will be, to become familiarly acquainted with each tribe, both as to appearance and habits; and to be able, by certain characteristics, readily to refer every insect which you may meet, to its proper genus and species. This you can scarcely hope to do, without making an entomological

collection. The act of making such a collection will afford you much intelligent amusement; and proceeding on the plan of the benevolent "Giants," in retaining but one or two specimens of the same insect, you will scarcely feel like a devastator in your visits to the haunts of these tiny revellers. Your search will still be after something *new;* while, at the same time, each walk will improve your acquaintance with insects similar to those already secured, and you will learn their habits in the best way; namely, by actual observation.

E. Do you advise me to attend to one set of Insects at a time? Shall I first collect the Butterflies, and then the Beetles?

S. I am inclined to advise you to collect *all;* for one good reason among others, namely, that different insects appear in the different months of the year, and you might be left without certain valuable specimens by delaying to secure them at the proper time. I would recommend you to search *everywhere;* and, according to the proverb, let all be fish that comes to your net. The various little groups of preserved specimens, gradually increasing in number and importance, will form your best practical assistants in that important branch of Entomology, the correct classification of Insects.

E. I shall certainly collect; pray tell me how I am to set about the business.

S. In the first place, you must provide yourself with suitable implements ; no doubt, you may form a tolerable collection without any implements at all, except your hands and your wide-awake hat ; still it is the part of wisdom to give yourself every advantage in your power. The most useful thing you can have, is a deep net (with a handle removable at pleasure), made of common lace or "net," which you will draw quickly through the grass, and bring up with probably three or four insects in it. With this, too, Eugenius, you will pounce fiercely on any butterfly that may be green enough to fly within your reach, or overwhelm in its folds the great dragon-fly, blind enough, with all the 24,000 eyes that cluster over its head, to let you approach it closely while at rest. With a similar net, but made of canvas, you will drag the stream, that nursery of many of the insect tribe, and draw from it a weedy deposit, from which struggle forth surprised and disconsolate animals, whose nature and habits I shall hereafter explain to you. A scissors-net, formed, as you may suppose from its name, like a large pair of scissors, with circles at the end, covered with gauze, which you close upon your prey, is also very useful.

E. I should think a portable magnifying-glass would be desirable.

S. Very much so : you must also have various little boxes at hand, in which to put your insects when you have caught them,

separately, as otherwise they might injure each other, or escape when the box is opened. You should also have in readiness, those lean attenuated members of the Pin family, called Entomological pins; and pieces of cork, on which to set your insects; that is, to place the wings, legs, and horns, or antennæ, by means of pins and pieces of cardboard, in the position in which you wish them to stiffen and remain.

E. I must get some kind of box to hold my collection. What do you recommend?

S. A large shallow box or tray, with a glass lid; the bottom of the box lined with cork, covered with white paper; in each corner of the box you should place a little piece of camphor wrapped in paper, to keep off the mites, &c., which would otherwise attack and injure your collection.

E. Having caught my insects, what am I to do with them? I ask this question with some degree of dread!

S. And justly so; for it is certainly unpleasant being obliged to kill these poor unoffending creatures. However, Eugenius, for our comfort we may reflect, that insects do not, in all probability, feel as acutely as we do.

E. But how can we know that?

S. If you will observe the indifference they display to the loss of a limb, you will, I think, be of the same opinion. Here, for

instance, is a crane-fly, which has alighted on my coat ; it has only four legs, you see, instead of six ; but—there it goes ! can there be a merrier or more unconcerned creature ? Even the loss of half the body seems to leave insects a considerable share of spirits and appetite ; an humble-bee will eat honey greedily, under these circumstances ; so you will allow that their sensations must be far less acute than ours. We are told also, that a naturalist placed a hymenopterous insect (dead, as he, of course, supposed) on its pin in his collection of insects ; it happened, however, that there was in the box a humming-bird hawk-moth, which is the proper food of this insect ; the consequence was, that our friend, which must have been a remarkably "cool hand," and a very clever one too, *got off its pin*, went over to the hawk-moth, and devoured a large portion of it.

E. How wonderful this is ! No, they certainly cannot feel as we do.

S. Besides, they would probably not die a natural death in any case ; by far the larger number of insects being made to be devoured by birds, fishes, or larger insects. And if you know how to set about it, you can kill them almost instantly.

E. How is it done ?

S. Beetles, flies, wasps, &c., you can almost always kill at once by throwing them into boiling water ; but this would, of course,

spoil the plumage of butterflies. Young laurel-leaves, chopped small, and placed in the box which contains the insect, will answer the purpose, though not so quickly as one could wish. The best way is said to be, to plunge a bone or iron instrument shaped like a pen, and dipped in prussic acid, into the thorax, between the first and second pair of legs. This causes instant death, which can hardly be called cruelty, or even pain.

E. No : this certainly ought to satisfy the most tender-hearted Entomologist. But now, in order that I may understand what I am about, will you tell me WHAT *is an insect?*

S. An insect, as the name implies, has a body divided into numerous segments. It also has, with very few exceptions, six legs, and a pair of jointed horns called antennæ.

E. But, Sylvius, I don't think a grub answers to this description at all ; and yet I believe it is an insect.

S. I was about to explain this to you : all insects, though some in a far less marked way than others, pass through four stages, in which many of them present most wonderful changes of appearance. These "four ages of insects" are, the egg, the larva or caterpillar, the chrysalis or pupa, and the imago or perfect insect.

E. Let me see—larva means mask, pupa means a baby, and imago means an image,—why is the caterpillar a mask?

S. Because it covers and conceals the perfect insect which lies within it, legs, wings, and all, biding its time. The larva contains a great many masks—it is quite a moving wardrobe, or a "Mrs. German Reed." It has three or four, sometimes eight or ten, caterpillar coats in which it successively appears, *casting* each one as it becomes too tight. Next, a coat of a very different form, which is to cover it when in the pupa state; it is then like a swathed mummy, or, as Linnæus thought, like a swathed baby. From this death-like state it emerges at length, the "image" or perfect representative of its race. Behold it, Eugenius! See that beautiful butterfly, now resting on that rose-bush, and now soaring high in the air! How entitled it is to look down on us in every sense, with its perfect symmetry, its power of flight, and its array, more beautiful than Solomon in all his glory! Is it not wonderful to recollect, that that creature once looked like a greenish worm, and found board and lodging in a succession of rolled-up nettle-leaves?

E. Yes: and it reminds us of our own future—"we" too "shall be changed;" like the poor crawling caterpillar (and I am sure the life of many human beings is very like that, toiling ceaselessly for daily food), we too bear within us the germs of a more perfect and spiritual existence. But did you say, Sylvius, that this change takes place in *all* insects, in beetles, for instance, and wasps?

S. In beetles and in wasps it does, very decidedly ; and in many other tribes also : you will recollect the transformation of the syrphus and the caddis worm ; there are some tribes, however, as locusts, cockroaches, spiders, &c., in which the pupa greatly resembles the perfect insect, and is equally capable with it of moving and eating. But Kirby and Spence tell us, that as these insects cast their skin at stated periods, and undergo changes, though slight ones, they are regarded also as being subject to metamorphoses. The pupa of the gnat is a lively creature, though we are informed that it does not eat ; you may have observed it in cisterns along with the gay little larvæ, but presenting a rather curled-up and hump-backed appearance.

E. Pray tell me something about the various parts of an insect. There seems to be much that is common to all insects.

S. Kirby and Spence tell us, that by far the larger proportion of insects are hexapods, that is, have six legs ; these they term "proper," and the few remaining tribes (all of which are "aptera" or wingless) they vote *improper* insects. These are the various tribes of mites, spiders, scorpions, woodlice, centipedes, and millepedes. All other insects, as you may observe in the newly caught specimens in this little box, have six legs.

E. They all appear also to have horns—antennæ, I think you call them. What is supposed to be the use of these appendages ?

S. They are evidently a very important part of an insect, and are probably the organs of some sense unknown to us. Huber observed that, when an ant is deprived of its feelers, or attennæ, it appears stupified, and though placed immediately before its hole, seems to have lost all knowledge of the locality. The antennæ also appear to be the organs of language, and both bees and ants have been observed to make signals by means of them, and thus convey information of different kinds to each other. If a hungry ant, for instance, wants to be fed, it touches with its antennæ, moving them very rapidly, those of the individual from which it expects its meal.

E. This signal then may be translated "Waiter! dinner for one, immediately!" Pray tell me something about the other appendages of the head, which seem to be very numerous, resembling little feelers.

S. Those are called "palpi," and are four or six in number: they are probably the organs of some sense, such as hearing or taste. The insect we are now examining being a beetle, has also, you see, mandibles or jaws.

E. Somewhat like those which the "Sawfly" has in an exaggerated degree.

S. Exactly: but if you examine the head of this butterfly, you will see that, instead of jaws, it has a long curled proboscis, with

which it sucks the honey of flowers. I need hardly describe the eyes of insects to you, as you probably know something about them.

E. I ought to do so, perhaps; but as I have told you, my ignorance of Entomology is profound. They seem to have a peculiarly stony, lack-lustre expression, or no expression.

S. That is because they are formed in a very different way from our eyes. They cannot turn, and have no eyelids; but instead of having, like us, one lens in each eye, insects have hundreds, sometimes thousands, of perfect lenses, hexagonal like the cells in a honeycomb, and each capable of reflecting a distinct image! Look at this wasp's head through the magnifying-glass, and you will see what I mean.

E. I am to examine its eyes: with this magnifier they resemble two finely curved surfaces covered with rich silk. Yes, I see you are right; on looking steadily, I can detect the little lenses. With what beautiful regularity they are arranged! Let me examine the remainder of the head. I can see the antennæ, mandibles, and palpi clearly, and on a most alarming scale; what a rigid, featureless thing the head of an insect appears! I doubt not that it is admirably adapted to the requirements of the animal; but an insect's place in creation must be far indeed from that occupied by ourselves. Is it not so?

S. You almost tempt me to an excursion in the fields of Com-

parative Physiology; for the difference between the internal structure of an insect and a man is almost more marked than their external dissimilarity. We will not, however, wander far from the theme at present in hand, an insect's head. One important difference between its economy and ours is this,—that the mouth has nothing to do with breathing, nor are there lungs; but there is a network of tubes throughout the whole body, resembling so many windpipes, so that the insect, in fact, *breathes all over*. The air finds entrance and exit through a set of holes, called "spiracles," along the sides of the insect. The air thus diffused performs, however, an office similar to that accomplished by the regular action of our lungs, namely, the purifying of the blood which has circulated through the system, by giving out its impure gas, and taking in the wholesome properties of the atmosphere. You see, Eugenius, that amidst great differences of detail, there yet exists a general resemblance in these works of the same Great Maker.

E. Insects, then, have a regular circulation of the blood. Where is the heart? and how is it possible to any but a fairy surgeon to demonstrate these things?

S. To reply to your last question: it is more easily done than you suppose, by the aid of the microscope, and by selecting a transparent insect for observation; for there are many, especially

among the aquatic larvæ, which realise old Momus's conception of the heart, whose secrets could have been unfolded by its being inclosed in a crystal case. With the microscope—but it must be one of far greater power than the magnifier which you hold in your hand—you may obtain a very satisfactory view of the circulation. There is a tube extending nearly through the length of the insect, and called its "dorsal vessel," but in fact answering the purpose of a heart in propelling the blood through the various parts of the body, and again receiving it. The little particles of blood may be clearly seen threading their way in downward and upward streams through the limbs, antennæ, &c.; and I have also observed them in the delicate nervures of the wings. Here also the tracheal tubes extend.

E. What are the "nervures"?

S. Those lines which, you observe, intersect the wings of these insects, and in those of dragon-flies, form a complete network; these insects can consequently remain longer on the wing than others, and it is their nature to do so. A dragon-fly is said to have been caught on board a vessel at sea, the nearest land, the coast of Africa, being 500 miles distant!

E. This is very strange! however, a structure so filled with air may require very little force to propel it. How many wings have insects generally?

S. Either one pair or two; four out of the twelve orders are "tetrapterous," to speak learnedly; that is, they have four wings. Six orders have only two wings, and the remaining two orders are destitute of wings properly so called. Of the six orders of two-winged insects, four possess elytra, which may possibly be considered as a species of wing; in which case only two classes can be said to have but one pair of wings, the Strepsiptera and the Diptera, or two-winged flies. Harry Longlegs is of this latter class; here he is, you see, with only two wings.

E. But there seem to be odd little apologies for wings where the second pair should be—little things somewhat like pins.

S. Yes—those are called "halteres" or poisers. Their use is not clearly known; but it has been observed that when they are cut off, the insect can neither fly nor walk. These poisers are only found in some of the Diptera. Others of the order have another pair of little "apologies for wings;" they are called winglets, and are placed between the wings and the poisers. It is said that when these also are cut off, the insect cannot fly.

E. What are the "tarsi" which the Butterfly Queen imagined to be a favourite "tit-bit" with the giants?

S. They are the feet or fourth joints of the legs, which you see are long, composed of several pieces, and terminated by a claw. The legs of all insects have a general resemblance to each other;

but they differ very much in shape, according to the work which they are intended to perform. The walkers have generally long legs; the diggers, broad ones, toothed like a saw and with sharp edges ; the leapers have prodigious thighs to their hind legs ; the swimmers, long flat legs fringed with hair, which they use as oars ; the climbers have strong bristly claws, and some of them curious hair-cushions on the under side of the feet ; and those favoured insects which can walk up a window and along a ceiling upside down, have all this and more, for they have round flat parchment-like appendages at the last joint of the foot, by means of which they perform these feats.

E. Those are my old friends the flies, no doubt ; I have been so far an Entomologist, that I have often watched them walking about and "tidying themselves," with great delight when a child ; sometimes with double delight, I fear, because they were walking over my lesson-book, and relieving me from the tedium of learning. How do these flat things help them in walking ?

S. Naturalists are not quite agreed about this ; some say that they are "suckers," like those with which you raise a stone by means of a vacuum ; others, that they emit some sticky substance. Perhaps both opinions may be correct. Now, we have had theory enough, Eugenius, what do you say to a little practical Entomology ?

E. Delightful ! but we have no net.

S. No : but I have a newspaper into which we will shake the branches of these trees. There—what have we got? Well—only a number of aphides to begin with; but they are very strange creatures.

E. Oh! these are my old friends, or rather my old enemies; I have been waging a fierce, but not altogether successful, war with them in the conservatory.

S. They are most destructive creatures; observe the state to which they have reduced the leaves of this tree. And there, you see, among them, at the back of the leaf, is the "slug-like" larva of the syrphus, surrounded by a number of empty skins, which testify to the number of good dinners he has already enjoyed.

E. This sycamore-tree presents an extraordinary appearance; the *right* side of every leaf is dotted over with a sort of glutinous shower, while the *wrong* side is a perfect mass of little winged insects.

S. Yes, those are aphides; and the "honey dew," as it is very appropriately called, is produced by them. The honey is "wasting its sweetness" for the present; but probably if you watch this tree for some days, you will see a number of ants on it.

E. They come, I suppose, to eat the aphides?

S. No, they are too wise for that: they come to *milk* them; the aphides are the *milch cows of the ants.*

E. *Am* I to believe you, or not ?

S. I will tell you what the great naturalist, Linnæus, says : "The ant ascends the tree that it may milk its cows, the aphides, not to kill them." Kirby and Spence confirm this statement ; and even tell us, that "ants make a property of these cows, for the possession of which they contend with great earnestness ;" "they keep guard round them," and even inclose them with a paddock wall !

E. How incredible ! I was about to say, only that you give such unquestionable authorities for it.

S. Pray read Kirby and Spence's delightful Introduction to Entomology, and you will be astonished, or rather astounded, by the wisdom of insects, bees and ants especially. These little communities, so industrious, so patriotic, so loyal, so careful of their young, so playful too at times, and so very ingenious and rational, have something almost human about them ;—except that they always seem to know their business and to do it, and that "the right ant is always in the right place." Now, let us shake these branches.

E. Ah ! here is a beautiful little fly ! what delicate filmy wings !

S. Yes, that is the lace-wing fly : the larva of which is an insatiable devourer of the aphides. Here is another beautiful

little creature,—this green weevil, which, under a magnifying-glass, is most gorgeously adorned with green and gold.

E. What is this little creature that jumps so astonishingly for its size ?

S. That is a species of cicada ; it does, as you observe, take wonderful leaps ; but what do you say to an insect jumping two hundred times its own length ? which is as if a man were to jump more than a thousand feet ! Or, what do you think of a minute fly, which runs as fast in proportion as if a man were to run twenty miles in a minute ?

E. I say that insects are most extraordinary and highly gifted creatures, and that I shall soon begin to think they are wiser and greater than man himself. But I know this is not the case; only, *they* have probably reached their perfection, and *man* is a larva !

S. I shall now show you, on one leaf, three good mothers,—a spider, an earwig, and an ichneumon-fly.

E. Well, none of them look particularly amiable ; but we must not judge by outward appearance. What do they do ?

S. The spider watches her bag of eggs with untiring care, and would, if necessary, die in defence of it ; there it is you see, an odd-looking white thing, with a conical roof, a good deal larger than the tiny spider, which sits watching it at a little distance.

E. Good little creature! but how does the earwig show her maternal affection?

S. By sitting on her eggs, and tending the *chickens* when they come out, exactly in the way a hen does! I have seen this myself, on removing a stone in a field. The third mother I mentioned, the ichneumon-fly, provides for her offspring with equal care, though in a very different way. Observe this little fly; it has a long "ovipositor," you see; with this it will pierce the body of some caterpillar or other larva, and deposit within it one or more of its tiny eggs; the number deposited depends on the size of the victim, for the ichneumon is so sagacious a mother, that she knows exactly how far she may go, whether or not the prize has been already appropriated by others, and if the poor wretch can live long enough to support her family. They on their part possess so much tact as carefully to *avoid* THE VITAL ORGANS, though devouring every other part of the caterpillar. It dies probably as soon as they have ceased to grow, and the cocoons containing their pupæ are then disclosed to view. Sometimes the caterpillar has just strength enough to assume the pupa form; it then dies, and in due time, ichneumons, instead of a butterfly, come out of the chrysalis.

E. What clever, odious creatures! Do they attack anything except caterpillars?

S. Yes: Naturalists tell us that hardly any species of insect is free from their ravages.

E. Here is a little dead beetle, I believe.

S. No, not dead; it pretends to be dead as a means of defence. This is a favourite device of these shrewd little creatures. Some of them escape very cleverly in this way; the moment your eager finger and thumb are about to close on them, they fall to the ground, perfectly motionless, and it is almost impossible to find them. I saw a little moth the other day, which I had nearly succeeded in catching; but the moment I touched it, it drew its wings together tightly, fell apparently lifeless, and looked so exactly like a dried seed of "oatgrass," that I could not find it for some minutes, though it was on the ground under my eyes. Others roll themselves into a ball and look like pebbles; and a caterpillar called the surveyor is very ingenious—it stiffens itself, projects from a branch at the proper angle, and looks so like a twig, that it probably cheats many a bird which would otherwise devour it. It will remain in this state for hours. Now observe these galls, Eugenius, with which the oaks are so much infested; you know, probably, that they are the work of an insect?

E. Yes: but how is it done?

S. Simply by the parent gall-fly (a little four-winged insect) piercing the leaf with her curious spiral sting, and depositing her

tiny egg in the puncture thus formed. This is enough ; in a few hours, as if by magic, a spacious dwelling and ample stores of food surround the future insect. The gall, however large, attains its full size in a day or two ; and strange to say, the egg itself grows before it is hatched. Altogether it is a wonderful provision of nature.

E. And the gall-fly is a very fortunate parent, as it seems that both provisions and accommodation increase in proportion to the size of her family !

S. Now as you are fond of riddles, perhaps you can tell me how it is that by laying her eggs the gall-fly indirectly influences the whole human race ?

E. No ! I can't imagine how.

S. She circulates ideas through the globe — hands down the great to immortality—gives wings to truth and falsehood—" wafts a sigh from Indus to the Pole—"

E. Dear me ! has she a telegraph ?—No, certainly not ! Gall-fly—gall-nuts.—I have found it, I think, or else my " Mangnall's Questions " greatly deceive me. *Ink* is made from the gall-nut.

S. Quite right. Galls are imported from Asia Minor in large quantities for this purpose.

E. These oak leaves seem to be curled up in an odd way ; I'll open one. How firmly fastened it is—with silk I see.

S. Yes, and you observe it has been the temporary resting-place of a little moth; there is the empty chrysalis in which the new moth seems to have worked its way nearly outside its cell before it made its escape. Insects take a variety of precautions to conceal and protect themselves when in the pupa state, this being their only means of defence at that time. Here, for instance, against the trunk of this sycamore, is a flat cocoon, formed so as to attract as little notice as possible. This is the chrysalis of the Goldtailed Moth, a pretty little creature which pulls off tufts of its golden tail to make a nest for its young ones. I have seen a green chrysalis too, fastened to a climbing rose, and so very like one of the leaf-buds of the plant, in colour, shape, and the angle at which it projected from the stem, that a bird might probably perch quite close to it without detecting it. It is beautiful, even touching, to observe the many means of protection and "ways to escape;" the strange wisdom, or, as Kirby and Spence express it, the "exquisiteness of instinct," superior to that of birds or beasts, which the great Creator and Father of all has bestowed on these his smaller and weaker children.

E. Certainly no Entomologist can be an Atheist: he is brought nearer, if possible, than any other student of nature to the forming and guiding Hand. I recollect there is a chapter in Paley's "Natural Theology" devoted to insects, as a proof of

design in creation, which I shall now read with great interest. Kirby and Spence will also be a rich treat.

S. Yes ; and best of all, the Book of Nature, which you will find inexhaustible, and ever increasing in interest. I must now leave you for the present, as my time has nearly expired.

E. You leave me a confirmed Entomologist, so that your time has not been thrown away. Indeed, I thank you most sincerely, my dear friend, for the instruction and amusement you have given me. How long have I been gazing idly at these old familiar trees ; each one (to copy Wordsworth's language) "was to me a tree, and it was nothing more ;" and now how very much more they seem ! But shall I confess a weakness to you, Sylvius ? I want to find larger and more showy insects. Where shall I look for them ?

S. In meadows and along the hedge sides ; under stones, rotten wood, and moss ; in ponds, in inn-windows ; in fact, everywhere. By setting traps—by rearing caterpillars—by lighting candles—but I cannot stay any longer at present. Come and see my collection, Eugenius, and we will have a chat as to the various tribes of insects, and the *how* and *where* to find them.

E. I should enjoy it exceedingly. When will you be at leisure ?

S. To-morrow afternoon I shall expect you. Till then, farewell !

PART II.

SCENE.—*A Study—Collections of Insects on the table; also breeding cages for Caterpillars, &c.*

SYLVIUS.—EUGENIUS.

E. How do you do, Sylvius? I am true to my engagement, you see, and have come to inspect your sanctum. What a variety of apparatus you have got here! Actually live caterpillars in cages; and your collection—how numerous it is! but I suppose half of the insects are foreign.

S. No, indeed, they are all native; I have a few cases of foreign insects which you see are fastened to the wall; but the native tribes interest me more, because I can watch them when alive.

E. There is no lack of beauty among them, certainly; how very showy, yet elegant some of these butterflies are!

S. Yes, and many which escape your notice now, appear splendid indeed under a microscope. Beautiful as this Peacock Butterfly is, or that Tiger Moth, this Swallow-tail, or those Hawk

Moths with their large velvet bodies, the gem of the whole collection probably is one that would never strike you, because it is not fitted to the scope of our eyes. This case you see, contains the Coleoptera or Beetles: that one the Dragon-fly tribes: this, the Wasp and his relatives. With patience and perseverance you may form quite as showy and varied a collection as mine; and if you go to some foreign country, as you probably will, and carry this taste along with you, you may make some valuable discoveries.

E. For the present, however, a home collection such as this would quite content me. I see there are prizes to be obtained in almost every tribe. How graceful and beautiful these Dragon-flies are! But what have you got in that bottle? Positively spiders strung on a thread!

S. Yes, the soft-bodied insects, which would shrivel and completely alter in appearence if placed on a pin, can be preserved in this way in a bottle of spirits. Here is a method, Eugenius, by which you may obtain very beautiful moths and butterflies; I mean by rearing caterpillars—you will find them very interesting pets, and by no means troublesome. I have lately constructed these breeding cages, which are merely wooden boxes (not deal, on account of the smell of turpentine), with the sides and front open, and covered with gauze or canvas. Inside you see there are

small tubes containing phials of water, in which I place, as often as may be required, fresh stalks or branches of the plant the caterpillars feed on; and at the bottom of the cage there is fine earth mixed with sand to the depth of two or three inches.

E. What is the use of that?

S. It serves as the *burial-place* of the caterpillars, which with their strange instinct descend into it when the pupa state approaches. You should not keep your breeding cages in too dry and warm a room, as this would harden the case of the pupa, and make it difficult, or sometimes impossible, for the poor moth to break through it, or if obliged to do so, you can moisten the earth in which the pupæ are buried.

E. I see you have some more "make-shift" contrivances here, which will just suit me, as I am anxious to begin without delay.

S. Strange to say, the ignorant caterpillars seem to thrive quite as well in these as in the most costly and elaborate cages. Some of my best moths spent most of their lives under that broken glass shade patched with net, which stands you see in a tea-box filled with earth; and many also in that lamp-shade standing in a flower-pot filled with earth.

E. What a moment of delightful excitement it must be, when your long cherished pet begins to come forth in its perfect state!

You must feel something like an anxious mama, watching her daughter's entrance into society.

S. Yes, and like some young ladies, though unlike others, the *debûtante* has at first a most timid and unformed appearance; the wings are crumpled, damp, and shapeless, the antennæ are bent down, and the *tout ensemble* is thoroughly dowdy. In a few minutes, however, all this is at an end, and the gay butterfly prepares to take flight.

E. What are these odd green caterpillars with long tails, feeding on sprigs of privet?

S. Those are the larvæ of the privet Hawk Moth,—this fine creature which you see is one of the most showy of the sphinges. It often flies, like many of this tribe, late in the evening. When you become thoroughly interested in the pursuit, you will frequently sally forth in the dusk or still later, with a net and lantern in search of the "noctuidæ," as they are called, which comprise a large proportion of the moth tribe. This is very enjoyable at the close of a sultry day; the flowers give out their richest fragrance, all is hushed and shadowy, and not least so these ghost moths, which flit about you with a peculiar pendulous motion, their soft satin wings glimmering in the fading light. Or, if you prefer staying at home, throw open the window of your room, and place at some distance from it a jar of flowers and a lighted candle,

which will prove powerful attractions. I will now describe another bait—a less elegant one, however, and intended for a widely different class of insects. You see these rather gay beetles with black and yellow backs, and those black ones near them. These are called burying-beetles ; if you place a dead mouse or bird on one of the beds in your garden, and look at it a few hours later, you will be surprised to see that it has partly sunk into the earth. Return next day and it will have disappeared. This is the work of burying-beetles, which have scooped away the earth underneath. I have caught several in another way, which I can recommend to you ; namely, putting a piece of raw meat in a wide-mouthed bottle, and placing this in some suitable position.

E. I shall set my various traps without delay, and make some breeding-cages. Now, if I have not completely tired you, Sylvius, I should be much obliged if you would describe to me the various orders of insects. I have been flitting about your room so long like a butterfly, from flower to flower, that I should now like to settle down to business like a—what insect shall I say ?

S. Like the ant, let us say, which after flying about, the gayest of the gay, on her large and silvery wings, at length deliberately twists them off, that she may devote herself entirely to her maternal duties. Is not this surprising ? But, to return to the classification of insects ; I shall have great pleasure in explaining

it to you, and as I can show you in my collection a specimen of nearly every tribe, this will help to impress them on your mind. But as you may probably have observed with regard to other sciences also, orders and classifications are mutable things; an arrangement which was approved of ten or twenty years ago, may be quite wrong now! You will occasionally find this very puzzling in your endeavours to ascertain the names of insects.

E. But why don't they let the names alone? "What's in a name?"

S. Because new discoveries frequently show that insects have been grouped together which are in fact widely different, and this of course renders a new arrangement necessary. Old works on any science (unless corrected to the present day) rather resemble old almanacks; such is the rapid increase of knowledge.

E. Knowledge then resembles an urchin who outgrows his clothes while they are still new. We are proud of his vigour, but must confess to being somewhat inconvenienced by this proof of it. But before we proceed to the classes, pray tell me something about certain insects which force themselves on every one's notice, and which I should much like to know more about. Not to mention gnats, and persecutors of that kind, there is the glow-worm, that favourite theme of the poets (a grub of some kind, I suppose), the turnip-fly, and the wire-worm, and

others which farmers know to their cost; the cricket, which makes an astonishing noise in our lower rooms at night; the locust, so often mentioned in Scripture; and *the* "moth" *par excellence*, the only one I daresay which we have much reason to dread.

S. The "butterfly" method has charms for you still I see. But take my advice, Eugenius, and go patiently through the various orders, and I will introduce all these insects in their proper places.

E. You are quite right—this will be much the wisest way, and I think the pleasantest also.

S. Let us begin then. My insects are arranged according to the system given by Kirby and Spence. There are twelve orders, and the first is that of Coleoptera, or sheath-winged insects. You will have no difficulty in finding out this class.

E. They must be these *beetles*, which are certainly, as your little book says,—"a numerous clan." But have all beetles wings? This is quite a new idea to me.

S. Not quite all, but by far the larger proportion of them have. Some few have the "elytra," or wing cases joined together, and of course, have no wings under them. If you were to raise the showy bronzed and embossed elytra of this elegant-looking "Ground-beetle,[2] you would only find under them two very little, apparently

useless *apologies*, as you would call them, for wings. But most beetles have two strong parchment-like wings, which fold up in some cases into a wonderfully small compass ; for instance, in these long ones, which are called "rove-beetles," and which have, you see, very small elytra. It is amusing to place a little rove-beetle on your hand, and watch its preparations for flight. It first raises the elytra ; then curls up its tail, and with a little brush which is at the end of it, smoothes out and arranges its wings ; it then puts by its brush and soars away.

E. Here is, at all events, a wingless beetle, if indeed it be a beetle at all ; but I suspect you have made a mistake for once, and that this brown grub is "in the wrong box."

S. No, indeed ; it is a beetle, and a very classical one—"star of the earth, and diamond of the night." It is the female glow-worm. The male has wings, but he has very little light. Here he is—they are a very ill-matched pair, you see.

E. I have seen the light of the glow-worm in the south of England, though I never looked for the insect which caused it ; it was a soft, beautiful light, reminding one of the planet Venus. But what an ugly creature. It is like seeing a made-up stage beauty by daylight.

S. Yes, or to be more poetical, it is like watching a homely countenance, which when it speaks and smiles, is so lighted up by

kindness, intelligence, and fun, that it acquires a lustre, more beautiful than beauty!

E. Well done, Sylvius; and we may add, that such a companion would seem brighter still, as the night of age or sorrow closed around us; while the gay things that pleased us in brighter hours had faded from our view, or left only dim flitting ghosts to remind us that such things were! To descend to earth, however, or rather a few stone steps below it,—where is the ugly Black-beetle, which infests underground apartments, and which has hitherto been the principal idea attached in my mind to the word Beetle? I don't see it.

S. It is in another box, being misnamed, and in fact not a beetle at all. We shall come to it in due time. I will now point out to you a few of the more remarkable beetles, and we will then pass on to the next order. The king of native beetles, is the Stag, which is found in Kent and Surrey; this great brown beetle, with large branching jaws. The next in size is the great black Water-beetle; and nearly approaching it in size, is your acquaintance in the poem, the dark green margined water-beetle.

E. It is a very beautiful creature, and I recognise the "rifle-green coat and the dandified look."

S. Here is the Cockchafer, the larva of which lives four years in

the earth, and often does great mischief to pastures ; and here is the Elater, or Click-beetle, the larva of which is the dreaded wire-worm, which, as I daresay you know, devours wheat, oats, grass, and will not refuse turnips, potatoes, and in short, everything it can get. It lives five years in the earth in the larva state.

E. Why is it called the Click-beetle ?

S. If you shut your hand upon a live one, you will feel it "click" in a very droll way ; leave it at liberty, but on its back, and it will jump away, still on its back, and alight on its legs. It is sometimes called the Skipjack-beetle on this account. Fire-flies are of this tribe. Here is the Turnip-fly, a little jumping beetle, which devours the young turnip plants.

E. What are these very pretty little dark green beetles ?

S. They are to be found on dock plants, and it is very curious to watch them leaving the pupa case. They are then soft, and a pale yellow, but by degrees harden, and acquire their beautiful metallic lustre. There, you see, are the various Coccinelidæ or Ladybirds ; here the genus Scarabæus, some of which are very pretty, and which resemble their Egyptian namesake in nature and habits ; the various water-beetles ; the larvæ of which (ugly, voracious creatures) you will find in ponds and streams. There are the various tribes of weevils, distinguished by a long beak on the head. I have not time to tell you more about beetles, and

will now go on to the second order, Strepsiptera. I have no specimens of this class, which as yet contains only four genera. They are odd little flies, parasitical while in the larva state, being found in the bodies of Ichneumon-flies. They are about a quarter of an inch long, and have two large and very peculiar wings, something like those of the next order, the Dermaptera, or Earwigs. Here is an earwig, set, you observe, with its large and beautiful wings expanded. It is astonishing into what a small space these fan-like wings fit when they are folded. The elytra, you see, are very small.

E. Have Earwigs wings also? Why are they not called beetles?

S. Those forceps at the tail distinguish them from beetles, and their transformations are also very different. The larva and pupa are very like the perfect insect, except in having no wings.

E. I suppose it is all nonsense about their getting into people's ears?

S. Entirely so; and it is extraordinary what can have given rise to such an idea; but they are very mischievous in gardens. The fourth order is that of Orthoptera. Here they are; your friend the black-beetle or cockroach is one of them. The locust is another, and the grasshopper and cricket are of the same class. These also have two wings, and elytra, one of which laps over the

other. The elytra are much thinner than those of beetles, and may assist them in flying. You wished to see the far-famed locust; it is not a native insect; here, however, is one which was caught at Wath, in the west of Yorkshire—a straggler probably from some great swarm on the continent of Europe. Here is our little native grasshopper, which, you see, is a miniature of the locust.

E. The locust is a very pretty insect, and I should be proud of finding one in our woods.

S. May Providence avert such a calamity from us as the visit of a swarm of locusts! It seems to be one of the greatest plagues which can visit a country. Great Britain is spared this infliction, probably because it is an island, for the locusts cannot fly far without alighting, although they may bo blown over by a high wind. Nothing can be more accurate than the sublime description given of a swarm of locusts by the prophet Joel, in the second chapter of his prophecy. Locusts, as there described, devour every vegetable substance, and often cause famine. In return, the natives of many countries *eat them*, and a recent traveller in Arabia tells us that they are "nearly as good as stale shrimps!"

E. Will you tell me how "the cricket on the hearth" makes its shrill noise?

S. In the same way that a file does—by friction. They rub the

elytra (the nervures of which are rough) against each other. This is confirmed by the fact that an *old* cricket or grasshopper has the notches in its nervures partly worn away, while they are sharp and distinct in "young beginners." Grasshoppers have besides the file a drum, something like the tympanum of the ear, which increases the sound. It is very possible that our ears can only catch the fortissimo notes of the cricket concert, and that an "aural microscope," if such could be, might reveal to us much that is undreamt of in our philosophy. I must now hasten on to the next order, and will wind up my account of the Orthoptera by telling you that the larvæ and pupæ in this class, as well as those of the Dermaptera, are like the perfect insect, except in being without wings; and also by pointing out to you some very curious members of this family in my foreign collection—these strange "Spectres" or walking leaves from Brazil. Here you see is a spray of laurel, one of citron, one of myrtle, and others; all complete insects! and here are withered leaves—is it not strange?

E. Most wonderful!

S. Our next order is called Hemiptera. Here are two curious insects belonging to it; the boat-fly or water Boatman, and the water Scorpion, which is represented on the title-page of Entomology in Sport; both are common in ponds. Cicadæ and bugs are also of this class, which you see have two wings and elytra.

Many little insects of this tribe abound on trees, as I daresay you recollect during our shaking of the branches yesterday, though we did not speak of them. The little inhabitant of the froth or "cuckoo-spit" on plants is a Cicada. The Aphides are also Hemiptera.

E. The Cicadæ are musical, are they not? I know the ancient Greeks were fond of them.

S. Yes, they kept them in cages for the sake of their song. Possibly, the principal charm of this song (like that of the Swiss Ranz des Vaches) was in association; it brought back to them the sights, sounds, and fragrance of the summer woods. The male Cicada (for the female has nothing whatever to say for herself) has a most wonderful and complicated musical instrument, which you will find described in Kirby and Spence. They tell us also that the Brazilian Cicadæ can be heard at the distance of a mile; and that this is as if a man of ordinary size, supposing his powers of voice increased in the ratio of his size, could be heard all over the world!

E. Marvellous! but how unbearable such a man would be. I wonder whether musical insects are a great annoyance to the *un*-musical.

S. Now for the sixth order—the Trichoptera. You already know the history of these; their larvæ are the curious caddis-worms

mentioned in the poem. They walk about at the bottom of ponds and rivers, their six legs projecting out of the case in front. These cases are balanced with the greatest nicety, that they may neither be too heavy to drag along, nor light enough to float. Here is the perfect insect ; it is something like a moth, you see ; but its four wings are covered with hair instead of scales. The next order is that of Lepidoptera ; these are the butterflies and moths.

E. They are certainly the most attractive class. What perfect taste, if one may use the expression, is displayed in the colouring and marking of their wings !

S. These beautiful wings are covered by minute scales, placed very much like slates on a roof, and forming a curious microscopic object. We have spoken so much already of the Lepidoptera, that I shall now only point out a few which you will find without much trouble before the summer is over—the White Cabbage Butterfly ; the Orange Tip ; the various Fritillaries,—the Red Admiral, the Peacock, the Tortoise-shell, the Blue, Copper, and Meadow Brown Butterflies. Then among moths, the Ghost, the Oak-egger, the Puss, the Emperor, the Elephant Hawkmoth, the Currant Moth, the Red and Yellow Underwings, the Twenty-plume—this odd and pretty little creature, which you see has each wing divided into twelve long feathers.

E. You seem to me to have some wasps among your moths.

S. Strange to say, those are Moths ; they are called Currant Clearwings, and are found on currant-bushes. I will now show you the Tineæ or Clothes-moths. They are rather pretty little creatures you see, and have a great resemblance to the Phryganeæ or imago of the Caddis-worm. The larvæ also make themselves cases or coats of cloth, fur, or whatever substance they attack, and *piece* them at each side in a very clever and amusing way, when they become too tight. I should think some larvæ of the Clothes-moths would be entertaining pets, and by keeping them alternately on pieces of black and red cloth, you would see all their patchwork distinctly. We now come to the eighth order, the Neuroptera, or Dragonflies.

E. They are a very beautiful tribe too. If I were a millionaire, and did not care much about losing my money, I should amuse myself by trying to make a flying-machine on the exact model of a Dragonfly ; the wings to be made of oiled silk, and the nervures inflated with air ; the passengers to sit in the *body* of the vehicle, the stoker between the wings, which he would keep in constant vibration by means of steam, or whatever power was found sufficient.

S. I think the machine would fly away, in a metaphorical sense, with your money, but I don't imagine that it would achieve any other flight except in the realms of Fancy. The

Dragonflies are a very fierce tribe, both as larvæ and as perfect insects. The pretty Lace-wing fly is one of the Neuroptera; and so is the Ant-Lion, a very strange creature, which, when a larva, catches its prey by lying in wait for them in a hole or pitfall, which it makes in the sand, and into which they tumble unawares.

E. Exactly the same stratagem which Doctor Livingstone tells us is used in Africa for catching wild animals.

S. The Ephemeræ or Day-flies are also Neuroptera; the larvæ live one, two, or three years in the water, but have a very brief span in their perfect state. The next order are the Hymenoptera, which we may perhaps call the most curious and interesting of all the insect tribes, because it comprises (besides the vast tribe of Ichneumon flies), the bees, ants, and wasps,—insects which resemble man in having an organised society and a form of government. I should mention, however, that as each tribe of animals, or of plants, appears to be curiously connected by some link with the tribe which most nearly approaches it, so the Termites or white ants, tropical insects which also form a perfect society, are Neuroptera, and in conjunction with the native ants, connect that tribe with the Hymenoptera.

E. But I suppose we may say that Locusts also have a society and a government; at least, they appear to be a thoroughly disciplined body.

S. They rather resemble the hordes of Goths which ravaged Southern Europe. It is thought that they have no leader, which you know we are told in the Book of Proverbs, ch. xxx. 17, shows the great wisdom with which they are gifted: "The locusts have no king, yet go they forth all of them by bands." And it certainly does seem a greater achievement for a vast multitude —sometimes covering an area of nearly 2000 square miles!*— to maintain perfect order and unity of purpose *without* a leader than *with* one. Some think they merely follow every movement of the first one which happens to take flight. To return, however, to our Hymenoptera. We may call a bee-hive an hereditary, or, on an emergency, an elective monarchy; they are Amazons governed by a Queen, who exercises great authority over her subjects, and they slay all the gentlemen. The *Waspish* system of government is patriarchal, or to coin a word, *matriarchal.* Each colony is founded anew in the spring by a female which has managed to survive the winter, and which at first is obliged to do all the work of making the nest, and attending to the young ones herself. By degrees children and grandchildren surround her, and by the close of the summer she is in the midst of 30,000 of her descendants. The Queen bee, on the contrary, is born a

* Kirby and Spence's Entomology, p. 127.

queen, or, at least, an heir-apparent, and surrounded from the first by obsequious attendants. The Ants (at least some species of them) are what Mrs. Beecher Stowe would not approve of,—a slave-holding aristocracy. The red ants actually capture the young of another kind of ant (a black one), which, when full-grown, wait on their masters and mistresses, and take care of the nursery department! Although the red ants may have shown great courage and pluck in acquiring these negroes, yet, when they have once tasted the luxury of being waited on, they become so extremely lazy, that by degrees the slaves acquire in some measure the upper hand of them.

E. As you say, there is something quite human about these little communities.

S. The "Peace Society" would not much like the ants either, as they are celebrated for their battles; and the temperance champions ought certainly to put down the humble bees, which, it seems, become perfectly tipsy on the nectar of the Passion-flower. The account of these last is very amusing; they are goodnatured, easy-going creatures, and therefore, of course, are robbed of their honey (which they keep in honey-pots made of the empty cocoons of the pupæ) by the bees and wasps, who have more energy and worse tempers. I must now hasten on to the tenth tribe, that of Diptera. Pliny thus distinguishes, and

correctly, between the Hymenoptera and Diptera; the former have their sting in the tail, the latter in the mouth; to the one this weapon is given as the instrument of vengeance, and to the other of avidity. The gadflies which torment horses and oxen belong to this order, as do the common fly, the syrphus, the horsefly, and various others. The gnat, too, is one of the Diptera, and is one of the greatest minor plagues in the world.

E. I know that, to my cost; certainly neither gnats nor locusts answer to the poet Cowper's description of insects:

The mighty myriads *now securely scorned.*

S. You are right; in truth, the Entomologist is not likely to regard any insect with scorn. And at the same time, much of his harshness towards even the most annoying of them will be softened by a nearer acquaintance. Notwithstanding my late sweeping denunciation of the gnats, I have long been their admirer, in consideration of their gracefulness, their evident enjoyment of life, and the peril they undergo in quitting the water, the home of their infancy, for the air, which is to be their abode thenceforward. At that crisis the pupa-case floats on the water as a boat, while the emerging insect appears like the dangerously top-heavy masts and spars, likely at every passing gust of wind to be upset past recovery.

E. Well, I must say I should wish the poor gnat success, were I to watch it at such a moment.

S. Such was my feeling when I penned a sort of congratulation to the emerging insect many summers ago ; you shall see the ditty if I can discover it among these files of entomological jottings and diaries. Here, at last ! can you make it out ?

E. (*reads*)—

TO THE GNAT.

Welcome, thou tiny Gnat
From the waters cold and dark,
Welcome to upper air !
Now, may the wild winds spare
Thy fragile bark.

Should they too rudely blow,
'Twould sink thee in the wave,
Never to rise again ;
And thy deep cradle then
Should be thy grave.

The awful moment's o'er !
Rejoice ! the day is won :
Up ! to the clear blue sky,
Where brightly shines on high
Yon dazzling Sun.

Dance in his radiant beams,
Thou insect glad and gay ;
Adieu ! may joys abound,
And happiness surround
Thy little day !

S. The next order is that of Aphaniptera, consisting of the *Flea* tribe, and the twelfth and last order, that of the Aptera, or wingless insects, comprises mites, scorpions, centipedes, and other curious but unpleasing insects. There is one genus of Aptera, which we may dwell on in conclusion, and which I sometimes think is the most curious of all the insect tribe—I mean spiders.

E. Their webs are certainly very strange, at least those out of doors ; they appear to be quite scientific in their formation.

S. These spiders are very appropriately called Geometricians ; and in tropical countries (where nature seems to display so much more vigour and *intensity* in her works than in our milder clime), they are said to be so large and strong, as to require a sharp cutting instrument to make way through them. The house spiders are called "weavers ;" but spiders have many accomplishments besides that of weaving. I do not mean that every spider can perform all the feats I am about to mention, but that they are each achieved by some member of the family. They make themselves long subterranean apartments, lined throughout

with silk, and closed by an accurately fitting door with a hinge; in this snug dwelling, father, mother, and thirty children have been seen living happily together. They construct rafts on which they float about ponds, putting any drowning insect they may meet with out of pain; they can foretell the weather, and it is said that their webs, or rather nets, if closely watched, form excellent barometers, the threads by which they attach them to branches being long if they expect fine weather, and short if otherwise. I have told you already of their strong maternal affection; but they are also, as a poor prisoner once found, capable of becoming attached to man himself. Finally, a spider can descend to the bottom of a pond, and *live* comfortably there in a diving-bell, that is, in a waterproof bag which it makes and then fills with an air-bubble. And it is also an aëronaut! it ascends "sky-high"—at least considerably above the steeple of York Minster,* on a gossamer web which it shoots into the air! Now I think you will allow that the last insect on my list is not the least extraordinary.

E. No, indeed! but I seem quite lost in wonders.

S. And I need scarcely tell you that there are many more marvels to be learnt about insects than those you have heard to-day; many, no doubt, besides, which still remain to be

discovered. The subject is a wide one, the number of species being calculated to be at least 400,000, while those of all other animals taken together do not amount to 30,000. Is not this a wonderful thought? Imagine this vast number of species, each containing numerous, many of them countless individuals, and all formed with infinite skill, and fitted for enjoyment. It is truly a marvellous world, and, as Paley says, "a happy world, after all." And we must be dull and depraved, indeed, if these thoughts do not fill our hearts with "wonder, love, and praise."

E. And with confidence and trust also. Our Lord himself teaches us to draw this lesson from the works of creation. But Sylvius, what surprises me is that Entomology is not more universally studied. Life is not so very amusing that we can afford to throw away a great and easily attainable source of pleasure such as this.

S. There even appears to have been formerly a strong prejudice against the study; of late years, however, it has spread very much among all classes. Kirby and Spence ask, in their work, written in 1811, whether "there is anything more to be wished, than that the cutlers of Sheffield were accustomed to employ their *Saint Mondays*" in Entomology; at present it is certain that a great many of the working classes in Sheffield and its vicinity do pursue the study with much zeal and intelligence; they have their Ento-

mological Society, their collections, their breeding-cages, and their entomological correspondence; and they frequently contrive to make their amusement, as well as their work, remunerative, by the sale of rare specimens.

E. I have spent a delightful afternoon, my dear friend, and am extremely obliged to you, but I must not trespass longer on your time, though there are many things which I should like to ask you.

S. Let us then wind up our discourse upon insects, by a walk along the bank of yonder beautiful river, where we shall see vast numbers of them in the full enjoyment of this glorious summer evening: the May-flies rising and sinking over the water on their glittering wings; the Dragon-flies, blue, green, and gold, darting along, or in the act of quitting the water for the air; beetles and butterflies of varied forms and hues; larvæ roaming through the clear depths, all in their way beautiful, all active and happy. Who can be melancholy while looking at such a sight?

E. Or who can see it, knowing all which you have kindly told me to-day, and not determine, as I do, to pursue the study of ENTOMOLOGY IN EARNEST?

BRADBURY AND EVANS, PRINTERS, WHITEFRIARS.

JUST PUBLISHED,

THE GENERA & SPECIES

OF

BRITISH BUTTERFLIES.

ILLUSTRATED AND CLASSIFIED ACCORDING TO THE SYSTEM NOW ADOPTED IN THE BRITISH MUSEUM.

BY H. NOEL HUMPHREYS.

This work will include every known species, in a series of carefully coloured Plates, in which these beautiful insects will be represented in their successive stages of Caterpillar, Chrysalis, and Butterfly; with the Plants on which they feed in the larva state.

To be issued in Monthly Parts, price 2*s.* 6*d.*, each part to contain 3 plates and several pages of descriptive letterpress.

To be completed in 10 parts, uniform with the "Genera of British Moths" by the same author.

JUST PUBLISHED,

THE GENERA OF BRITISH MOTHS.

BY H. NOEL HUMPHREYS.

ILLUSTRATED BY A SERIES OF PICTURESQUE GROUPS OF MOTHS, ACCOMPANIED BY THEIR RESPECTIVE CATERPILLARS, AND THE PLANTS ON WHICH THEY ARE FOUND.

To be published in a Series of Monthly Numbers, price 2*s.* 6*d., each containing Three Plates drawn and coloured from Natural Objects; with descriptive Letterpress, and to be completed in Twenty Numbers.*

It is intended that this work shall contain a popular account of each genus of British Moths, with a notice of every species it contains. All the novelties added to the catalogue of British species up to the present time will be described, and a large proportion of them will be selected to illustrate the genera to which they belong.

The work will be of handsome size (imperial octavo), and printed on thick paper. It is to form a handsome drawing-room book, as well as one of instruction and useful reference on the subject.

The first number, containing three groups of Hawk-moths, Burnet-moths, etc., was issued on the 1st of April, 1858.

Subscribers are requested to send their names to Mr. PAUL JERRARD & SON (Publishers), 170, *Fleet Street, or to their respective Booksellers.*

LONDON: PAUL JERRARD & SON, 170, FLEET STREET, E.C.

PAUL JERRARD'S CREAM & GOLD SPECIAL PRESENTS,

APPROPRIATE

FOR MARRIAGE, BIRTHDAY, AND FESTIVE OCCASIONS, AND ALL SEASONS.

PAUL JERRARD'S CREAM & GOLD SPECIAL PRESENTS.

In elegant patent binding, richly embossed in gold, imperial 8vo, price 31*s.* 6*d.*,

GARDEN BEAUTIES.

A Series of the most magnificent of our Garden and Greenhouse Flowers, exhibited in a succession of brilliantly-coloured Plates, executed in fac-simile from highly-wrought Floral Studies by an Eminent Artist. Each Plate is accompanied by an Account of the Plant and its associations, printed in gold, and embellished with Decorative Borders of appropriate design, in the manner of some of the celebrated Mediæval Book Decorations of Nuremberg and other Schools, but treated in a modern fecling. The work being inteuded to form a splendid Present suitable to all occasions, a Dedicatory Page is appended, enriched by a highly-finished design formed of a Wreath of five differeut varieties of the Rose, iutended for the reception of a Name or Verses.

This Work will be found not only an elegant addition to the attractions of the drawing-room table, but the exquisite finish and close imitation of the original paintings render it a valuable collection of Models for Water-colour Painting.

Just Published.

HUMMING BIRD OFFERING.

Imperial 8vo., in Paul Jerrard's Cream and Gold Patent Binding, Price 31*s.* 6*d.*

This Elegant Work, forming a most exquisite subject for a Present, is beautifully adapted for the Drawing-room Tablo, and consists of 12 highly coloured specimens of Humming Birds, with descriptive Poetry, and profuse ornaments, printed in Gold; an elegantly enriched Dedication Page affords an appropriate space, designed expressly to receive the name of the Recipient as well as that of the Donor.

Now publishing, Second Edition, with New Drawings, in a hand-

PAUL JERRARD'S NEW GIFT BOOK.

In Tortoiseshell or Stoue Pattern Binding, 31*s.* 6*d.* In Paul Jerrard's Patent Porcelain Binding, delivered in Boxes, 42*s.*

BUTTERFLIES IN THEIR FLORAL HOMES.

A series of pictures representing some of our most beautiful native BUTTERFLIES in their various stages, grouped among the plants and flowers ou which they feed; each composition forming a complete picture, richly colored from choice specimens of the insects and flowers.

The Plates accompanied by illustrative Fables, suggested by the phases and incidents of insect life, and the especial beauty of Butterflies: to which is added a Descriptive Index, in which the details of each Plate are explained.

The profuse ornaments, consisting of portraitures of some of the most elegant Grasses, &c., are printed in Gold.

An elegantly enriched Dedication Page affords an appropriate space designed expressly to receive the name of the giver or receiver of the Work, and the Binding is of a massive, rich, and novel description, introduced for the first time expressly for this Book.

In cloth, elegantly gilt, imperial 8vo, price 21*s.*,

FLOWERS IN THEIR SEASON.

A Selection from the Garden Flowers of each Mouth, arranged in a succession of Plates, imitating in fac-simile a Series of Drawings from Nature, made expressly for this Work; the Flowers of the Winter, Spring, Summer, and Autumn, being arranged in the monthly order of their flowering. The Plates are accompanied by suitable Descriptions, printed in Gold, and enriched with Decorative Capitals aud elegant Borders.

In Four Books, imperial 4to, price 31*s.* 6*d.* each,

GEMS FOR THE DRAWING-ROOM.

By PAUL JERRARD. Comprising exquisitely-coloured Drawings of Fruit, Flowers, and Birds, variously grouped, accompanied by Poems, interpreting their Lyrical Language, written expressly for the Work. Printed in Gold, with Ornamental Gold Borders, inclosed in a chaste and novel Binding of Cream and Gold, desigued for, and introduced only in, these Publications; the whole forming a truly elegant suite of Table Books, most appropriate for Marriage,

FLOWER PAINTING IN 12 LESSONS.

A Course of Instruction, in which the whole Art of Painting Flowers in Water Colours, from the simple outline through every subsequent stage of progress, is both described and illustrated. The instructions in each progressive advance are confined to a single page, and so simplified as not to perplex the Student with that needless quantity of reading usually found in drawing-books. The Illustrations or Models consist of a Series of beautiful and popular Flowers, drawn and highly coloured from nature—such as the Rose, the Iris, the Narcissus, the Japan Lily, the Cydonia Japonica, the Tournesol Tulip, The Convolvulus Major, the Peony, the Pansy, &c.—which the Instructions will enable the Student to imitate with the greatest accuracy, and so lead the way to draw from Nature.

In imperial 8vo, price 21*s.*; or extra bound in patent binding for Special Presents, price 31*s.* 6*d.*,

THE FLORAL OFFERING.

This elegant little Work, forming a most exquisite subject for a Present, is beautifully adapted for the Drawing-room Table, and consists of Twelve highly-coloured designs for the Twelve Months of the Year, designed expressly for this Work, each design containing Representations of Flowers Blooming in the Mouth to which the Illustration refers. At the corner of each is the name of the Flowers and Months in which they Bloom, ornamentally entwined with Flowers of the Month, and tastefully printed in Gold. Opposite each Design is placed Descriptive Poetry, ornamentally printed in Gold.

The title-page represents a Bower, gracefully interwoven with Flowers of various hue. Immediately after this beautiful Title is a Rose and Bud, so arranged with leaves as to allow (if intended as a Present) a space for the Name of the Recipient as well as that of the Donor; or, if not intended as such, to allow of a Motto being inserted.

The book is executed in a chaste and beautiful binding peculiar to itself, the style of which is entirely novel.

tained in Four Books forms a highly-diversified collection, calculated to afford delight to all who can appreciate the beautiful in Nature.

Books I. and II. FRUIT and FLOWERS; the Drawings by PAUL JERRARD, the Poetry by the late F. W. N. BAYLEY, Esq. Book III. BRITISH BIRDS; with Illustrated Poetry, original and selected. Book IV. HUMMING BIRDS; the Drawings by PAUL JERRARD, the Poetry by F. W. N. BAYLEY, Esq.

New Edition on Toned Paper. In patented binding, imperial 8vo, price 31*s.* 6*d.*,

FLOWERS FROM STRATFORD-ON-AVON.

A rich Gift-Book for all Seasons, consisting of a Series of Floral Compositions, suggested by the exquisite description of Flowers which lie scattered through the Works of SHAKSPEARE, the illustration of which was suggested to the author during a summer ramble on the banks of the Avon, and other localities surrounding the early home of our great Poet. The Flowers there gathered, growing profusely on the spot where SHAKSPEARE had imbibed his first impression of their being, formed the Models for the Plates in this Volume, which have been elaborately and richly coloured in exact imitation of the Original Drawings. The exquisite passages of Poetry which accompany these Plates are printed, as they deserve to be, in Letters of Gold, and richly decorated with appropriate Ornaments, in a costly and entirely novel style.

OPINIONS OF THE PRESS.

"It was a pretty thought, to cull from the banks of 'Sweet, winding Avon,' posies of the loveliest flowers, to arrange them in gay and graceful groups, and then to place faithful copies of them beside the passages of Shakspeare wherein they are spoken of.

"This is what Mr. Jerrard has done with great taste; there are in his book a dozen of these floral groups, and on the page opposite to each is printed in golden letters, surrounded by some elegant ornamental designs, the poetry referring to them; the flowers are excellent specimens. The cover of the volume is a novelty to us, it is worthy of the contents, showing a rich design in gold upon a buff enamelled ground. These Shaksperian 'flowers' should only decorate the table of a lady's boudoir."—*Art-Journal.*

Mr. JERRARD has now Thirteen different Volumes of these elegant Drawing-room Books, appropriate for Marriage, Birthday, or Annual Presents, while their sterling merit stamps them as proper for all times.

One of the principal features in Mr. JERRARD'S "DRAWING-ROOM BOOKS" is the elegant Presentation Page which accompanies all his Gift Books. These Presentation Pages are enriched with an appropriate Decoration, different in each volume, enclosing a space in which the name of the donor and of the person to whom the book is presented may be inscribed.

*** PROSPECTUSES MAY BE HAD OF THE PUBLISHER.

LONDON: PAUL JERRARD & SON, 170, FLEET STREET.

NEW EDITION ON TONED PAPER.

In patented Binding, imperial octavo, price 31*s.* 6*d.*,

FLOWERS FROM STRATFORD-ON-AVON.

A rich Gift-Book for all Seasons, consisting of a Series of Floral Compositions, suggested by the exquisite descriptions of Flowers which lie scattered through the Works of Shakspeare, the illustration of which was suggested to the author during a summer ramble on the banks of the Avon, and other localities surrounding the early home of our great Poet. The flowers there gathered, growing profusely on the spot where Shakspeare had imbibed his first impression of their being, formed the models for the Plates in this Volume, which have been elaborately and richly coloured in exact imitation of the Original Drawings. The exquisite passages of Poetry which accompany these Plates are printed, as they deserve to be, in Letters of Gold, and richly decorated with appropriate Ornaments, in a costly and entirely novel style.

JUST PUBLISHED,

Elegantly bound (Imperial 16mo.), Gilt sides, 70 pages with 40 coloured Illustrations from the natural insects, on toned paper. Price 10*s.* 6*d.*,

ENTOMOLOGY IN SPORT,

AND

ENTOMOLOGY IN EARNEST,

BY THE HONORABLE MRS. W——, AND LADY M——.

Startling Account of four Lady Giants in pursuit of the insect tribe with a "Dreadful Machine," creating terror and amazement among the little creatures—their narrow escape—a Council called to warn and advise—their mutual congratulations at meeting once more alive—sudden interruption !——

"That moment a cloud seemed to darken the air;
The Insects looked up with a terrified stare;
Oh ! horror of horrors ! the Net !—and the Giants ! ! !"

This entertaining Work admirably adapted to excite the interest and rivet the attention of the young, offers in the first part, "Entomology in Sport," an agreeable bait in the form of a pleasing and fanciful narration, by which unwary youths may find themselves caught in the meshes of Science, while only seeking for amusement. The second part of the Work, "Entomology in Earnest," furthers this object by (in the form of a dialogue between Sylvanius and Eugenius), unfolding the beauties of Entomology; showing the various orders scientifically arranged, with easy methods of forming collections, and preserving specimens; which, with many pleasing accounts of the marvellous transformations and peculiarities of the Insect World, confirmed by the best authorities, forms a most attractive and useful insight into this most pleasing science.

No family should be without it. Ought to be in the hands of every young person.

LONDON: PAUL JERRARD & SON, 170, FLEET STREET, E.C.

